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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,159	03/12/2004	Donald E. Donnelly	WR-620	8476

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WHITE RODGERS DIV.
EMERSON ELECTRIC CO.
9797 REAVIS RD.
ST. LOUIS, MO 63123

EXAMINER

PRICE, CARL D

ART UNIT PAPER NUMBER

3749

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,159

Applicant(s)

DONNELLY, DONALD E.

Examiner

CARL D. PRICE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-8, 14-18, 23-28 and 34: rejected under 35 U.S.C. 102(e)

Claims 1-8, 14-18, 23-28 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by **US006722876B (ABRAHAM ET AL)**.

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In regard to claims 1-8, 14-18, 23-28 and 34, **US006722876B (ABRAHAM ET AL)** shows and discloses control circuit for shutting off a fuel-fired appliance burner having a thermocouple voltage (see column 3, line 1) that enables a gas valve solenoid to supply fuel to the appliance burner, the control circuit comprising:

- a sensor (22) capable of detecting the presence of flammable vapor;
- a disconnection means (14) in series with the gas valve circuit that enables the flow of gas,
- a switching means (24) responsive to the sensor detecting the presence of flammable vapors, wherein the switching means switches an electrical current through the disconnection means in a manner such that the disconnection means opens the gas valve circuit to shut off the gas to the burner (see column 3, lines 65-67);
- the disconnection means comprises a fuse (F1; figure 4) device;
- the sensor's resistance increases as the concentration of flammable vapors increases (see column 4, lines 4-13);
- the sensor is incorporated in a voltage divider circuit (see figure 3; column 3, lines 30-40);
- the switching means comprises a field effect transistor (Q1) that is gated on by the voltage divider circuit (see figure 4);

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- the voltage divider circuit comprises a resistor (R3) in series with the sensor, where an increase in resistance of the sensor will provide an on voltage to the gate for switching the Field Effect Transistor; and
- the Field Effect Transistor switches on to conduct current through fuse causing the fuse to blow when the sensor incorporated in the voltage divider circuit detects a predetermined flammable vapor concentration (see column 3, lines 40-54) wherein the predetermined flammable vapor concentration is about 50 percent of the lower flammability level and the sensor's resistance increases as the concentration of flammable vapor increases(see column 3, lines 55-64).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-13, 19-22, 29-33 and 32-36: rejected under 35 U.S.C. 103(a)

Claims 9-13, 19-22, 29-33 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **US006722876B (ABRAHAM ET AL)** in view of &&&

US006722876B (ABRAHAM ET AL) shows and discloses control circuit for shutting off a fuel-fired appliance burner having a thermocouple voltage (see column 3, line 1) that enables a gas valve solenoid to supply fuel to the appliance burner, the control circuit comprising:

- a sensor (22) capable of detecting the presence of flammable vapor;
- a disconnection means (14) in series with the gas valve circuit that enables the flow of gas,
- a switching means (24) responsive to the sensor detecting the presence of flammable vapors, wherein the switching means switches an electrical current through the disconnection means in a manner such that the disconnection means opens the gas valve circuit to shut off the gas to the burner (see column 3, lines 65-67);
- the disconnection means comprises a fuse (F1; figure 4) device;
- the sensor's resistance increases as the concentration of flammable vapors increases (see column 4, lines 4-13);
- the sensor is incorporated in a voltage divider circuit (see figure 3; column 3, lines 30-40);
- the switching means comprises a field effect transistor (Q1) that is gated on by the voltage divider circuit (see figure 4);
- the voltage divider circuit comprises a resistor (R3) in series with the sensor, where an increase in resistance of the sensor will provide an on voltage to the gate for switching the Field Effect Transistor;

- the Field Effect Transistor switches on to conduct current through fuse causing the fuse to blow when the sensor incorporated in the voltage divider circuit detects a predetermined flammable vapor concentration (see column 3, lines 40-54) wherein the predetermined flammable vapor concentration is about 50 percent of the lower flammability level and the sensor's resistance increases as the concentration of flammable vapor increases(see column 3, lines 55-64).

US006722876B (ABRAHAM ET AL) shows and disclose the invention substantially as set forth in the claims with possible exception to:

- a battery (e.g. - exactly two batteries) for supplying voltage to the voltage divider circuit and the current switched to the fuse;
- a low battery level detection circuit for sensing a low battery voltage condition;
- an intermittent audible alarm means for alerting an occupant when the low battery level detection circuit detects a low battery condition;
- an audible alarm means for alerting the occupant when the sensor detects the predetermined flammable vapor concentration; and
- the disconnection means comprises a relay device.

US005165883A (VAN BEMMEL) teaches, from the same appliance control field of endeavor as **US006722876B (ABRAHAM ET AL)**, using a battery for supplying voltage to a combustion control monitoring system including:

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- the battery supply includes a low battery level detection circuit for sensing a low battery voltage condition;
- an intermittent audible alarm means for alerting an occupant when the low battery level detection circuit detects a low battery condition;
- an audible alarm means for alerting the occupant when a gas concentration sensor detects the predetermined unsafe concentration.

In regard to claims 9-13, 19-22, 29-33 and 32-36, for the purpose of providing suitable means for assuring an adequate power supply, and for the purpose of conveying information regarding the status of the power supply, the level of gas concentration and the condition of the burner, it would have been obvious to a person having ordinary skill in the art to modify **US006722876B (ABRAHAM ET AL)** to include a battery for supplying voltage to a combustion control including a low battery level detection circuit having an intermittent audible alarm as well as an audible alarm means for alerting the occupant when a gas concentration sensor detects the predetermined unsafe concentration, in view of the teaching of **US005165883A (VAN BEMMEL)**. In regard to claims 13 and 33, for example, Official Notice is taken that it is well known to use relay devices in electronic combustion control monitoring systems. Thus, in view of that which is well known, it would have been obvious to a person having ordinary skill in the art to use a relay device for the disconnect means in **US006722876B (ABRAHAM ET AL)**. In regard to claim 29, for example, ,since the number of batteries necessary to supply power to a given combustion control circuit would depend on numerous design concerns such as the voltage requirements of alarms, the size and type of the batteries,

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etc., to use exactly two batteries to provide power to the **US006722876B (ABRAHAM ET AL)** control circuit can be viewed as nothing more than a mere matter of choice in design absent the showing of any new or unexpected results produced therefrom over the prior art of record.

Conclusion

See the attached USPTO form 892 for prior art made of record and not relied upon and which is considered pertinent to applicant's disclosure.

USPTO CUSTOMER CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARL D. PRICE whose telephone number is 703-308-1953. The examiner can normally be reached on Monday through Friday between 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 703-308-1935. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Carl D. Price', with a stylized, flowing script.

CARL D. PRICE
Primary Examiner
Art Unit 3749

cp